

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 18 JUNE 2005 (18.06.2005)

Applicant's or agent's file reference P13058-PCT		FOR FURTHER ACTION See paragraph 2 below
International application No. <b>PCT/KR2005/000743</b>	International filing date (day/month/year) <b>15 MARCH 2005 (15.03.2005)</b>	Priority date(day/month/year) <b>15 MARCH 2004 (15.03.2004)</b>
International Patent Classification (IPC) or both national classification and IPC <b>IPC7 H04B 1/40</b>		
Applicant <b>SAMSUNG ELECTRONICS CO., LTD. et al</b>		

## 1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer JEONG, Jae Woo Telephone No. 82-42-481-5718 
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PCT/KR2005/000743

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material  
 in written format  
 in computer readable form
  - c. time of filing/furnishing  
 contained in the international application as filed.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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PCT/KR2005/000743

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1 - 42	YES
	Claims		NO
Inventive step (IS)	Claims	21 - 31, 41 - 42	YES
	Claims	1 - 20, 32 - 40	NO
Industrial applicability (IA)	Claims	1 - 42	YES
	Claims		NO

**2. Citations and explanations :**

D1 : GB 200228871

D2 : US 20030181167

The claimed inventions disclose a multimode/multiband mobile station, which comprises a plurality of low noise amplifier(LNA) and a near-zero intermediate frequency(NZIF) broadband image rejection(IR) mixer.

D1 relates a multi-channel tuner apparatus that comprises a plurality of tuners, each of which converts a selected channel to the NZIF. D2 relates a switch apparatus for switching between signal paths of at least three frequency bands.

The subject matter of the claims 1-20 of the claimed inventions, which each band signal is converted to the NZIF, is similar to that of D1. However, a reconfigurable band pass filter(BPF) for filtering analog IF signal of the claims is not disclosed in D1. Therefore, the claims 1-20 of the claimed inventions fulfil the requirement of novelty under PCT Article 33(2). On the other hand, the reconfigurable BPF's adaptiveness to the frequency band of the input signal is obvious to a person skilled in the art or is suggested in the prior art. Therefore the claims 1-20 of the claimed inventions do not fulfil the requirement of inventive step under PCT Article 33(3).

The subject matter of the claims 21-31 of the claimed inventions, a reception module for receiving signals corresponding to the same frequency bands among the multiple modes and multiple bands through combined receiver, is not obvious to a person skilled in the art and is not suggested in the prior art. Therefore, the claimed inventions 21-31 are considered to fulfil the requirements of novelty under PCT Article 33(2) and inventive step under PCT Article 33(3).

continued

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

Continuation of Box V.2

The subject matter of the claims 32-40 of the claimed inventions, multiband receiver which comprises switch, mixer, and filter, is similar to that of D2. However, a baseband processing module for controlling a receiver corresponding to the mode in the claims 32-40 is not disclosed in D2. Therefore, the claims 32-40 of the claimed inventions fulfil the requirement of novelty under PCT Article 33(2). On the other hand, the baseband processor applicable to each of multiband signals is obvious to a person skilled in the art or is suggested in the prior art. Therefore the claims 32-40 of the claimed inventions do not fulfil the requirement of inventive step under PCT Article 33(3).

The subject matter of the claims 41-42 of the claimed inventions, a WCDMA/GSM combined receiver corresponding to a WCDMA/GSM combined band, is not obvious to a person skilled in the art and is not suggested in the prior art. Therefore, the claimed inventions 41-42 are considered to fulfil the requirements of novelty under PCT Article 33(2) and inventive step under PCT Article 33(3).